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Patent Claims

5 1. A method for updating a digital map, comprising elements of a traffic route network, in a user end device on which at least one user application of the digital map runs, using a second digital map arranged in a control center,

10 characterized in that an element subset – to be updated – of the digital map can be selected at the user end device and updating of this element subset can be requested from the control center via an at least temporary data link, wherein, after such a request has

15 been received, the control center automatically selects, in addition to the element subset to be updated, an additional element subset in the second digital map in such a way that the digital map is internally consistent after the updating, and wherein

20 data for updating the element subset to be updated and data relating to the additional element subset is transmitted from the control center to the user end device via the at least temporary data link and supplied to the digital map.

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2. The method for updating a digital map, comprising elements of a road traffic network, in a user end device on which at least a user application of the digital map runs, using a second digital map arranged

30 in a control center, characterized in that an element subset – to be updated – of the digital map can be selected at the user end device and updating of this element subset can be requested by the control center via an at least

35 temporary data link, wherein, in a first step, after the reception of such a request, the control center transmits data for updating the element subset to be updated to the user end device via the at least

temporary data link and supplies it to the digital map,
after which, in a second step, the user end device
checks whether additional element subsets of the
digital map are affected by the updating and as a
5   function of the result of the check the control center
automatically requests updating of these additional
element subsets in such a way that after the data of
the additional subsets has been received and supplied
the digital map is internally consistent.
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3.   The   method   as   claimed   in   claim 1   or   2,
characterized in that the element subset to be updated
comprises a geographic area and/or at least a route as
a series of edges and/or at least a class of routes
15 and/or one or more points of interest (POI) and/or
classes of POIs.

4.   The method as claimed in claim 3, characterized in
that   the   consistency   with   respect   to   the   user
20 application which is running or with respect to any
user application which is running on the user end
device is ensured by automatically selecting the
additional element subset in such a way that after the
data for updating the additional element subset has
25 been supplied there is no route in the digital map of
the   user   end   device   at   whose   end   it   is   inevitably
necessary for traffic route network users to turn
around if this route is not also included in the second
digital map and/or there are no two routes at whose
30 ends traffic route network users must inevitably turn
around if these two routes are connected in the second
digital map by a small number of edges, and/or there
are   no   routes   on   which   allocated   turning   around
restrictions apply which are included in the second
35 digital map as a result of routes, and/or route data
which is relevant to reaching a POI is as up to date as
the data of the POI itself, and/or element dependencies
are transmitted completely.

5.   The method as claimed in one of claims 1 to 4,
characterized in that the at least temporary data link
between a user end device and control center is
5   embodied as a mobile radio link.

6.   The method as claimed in one of claims 1 to 5,
characterized in that the user end device automatically
requests that the control center perform updating when
10   a user application of the digital map is started and/or
periodically.

7.   The method as claimed in one of claims 1 to 6,
characterized   in   that   corrections   of   element
15   inaccuracies   in   the   second   digital   map   are
characterized specifically, wherein, together with the
additional element subset, further data items which can
be used to restore a logic link between elements in
which inaccuracies are corrected by updating and non-
20   corrected elements are transmitted from the control
center to the user end device via the at least
temporary data link.

8.   The method as claimed in one of claims 1 to 7,
25   characterized in that the data for updating the element
subset to be updated also includes such elements of the
second digital map which are contained only partially
in the element subset to the updated.

30   9.   The method as claimed in one of claims 3 to 8,
characterized in that information about partitions,
which constitutes a decomposition of the digital map on
a geographic basis in the user end device can be stored
at the control center end and a geographic area which
35   is to be updated can be identified by means of a
corresponding partition reference.

10.   The method as claimed in one of claims 1 to 9,

characterized in that the user end device is registered at the control center end and identifies itself to the control center when there is a request to the control center.

11.   The method as claimed in one of claims 1 to 10, characterized in that when there is a request to the control center the user end device transmits version information for an element subset to be updated to the digital map.

12.   The method as claimed in one of claims 1 to 11, characterized in that an upper limiting value is provided for the size of the additional element subset or of each additional element subset.

13.   The method as claimed in one of claims 1 to 12, characterized in that logically associated updates of the elements are transmitted in combination.

14.   The method as claimed in one of claims 1 to 13, characterized in that if the digital map in the user end device only has a part of the second digital map arranged in the control center, inconsistency of the digital map is permissible at points at which there is a boundary between a part which is included in the digital map and a part which is not included in the user end device.

15.   A device for carrying out the method as claimed in one of claims 1 to 14, having a user end device comprising memory means for a digital map and a control center comprising control center memory means for a second digital map, wherein the user end device and control center each have an arithmetic means and a communication means for setting up an at least temporary data link.